

## ABSTRACT

In an optical transmission system by frequency-division multiplexing, the interference due to distortions of a first signal against a second signal can be reduced. In the optical transmission system where a modulated optical signal by the first signal is further modulated with the second signal for transmission, distortions of the first signal corresponding to a frequency band of the second signal is extracted. The extracted signal is phase-inverted and then adjusted in phase and amplitude with respect to the distortions of the first signal to obtain a correction signal. By intensity-modulating the first signal containing the distortions by the correction signal, the distortions of the first signal against the second signal can be cancelled out. Alternatively, by intensity-modulating the first signal containing the distortions by a combined signal of the correction signal and the second signal, the distortions of the first signal against the second signal can be cancelled out.